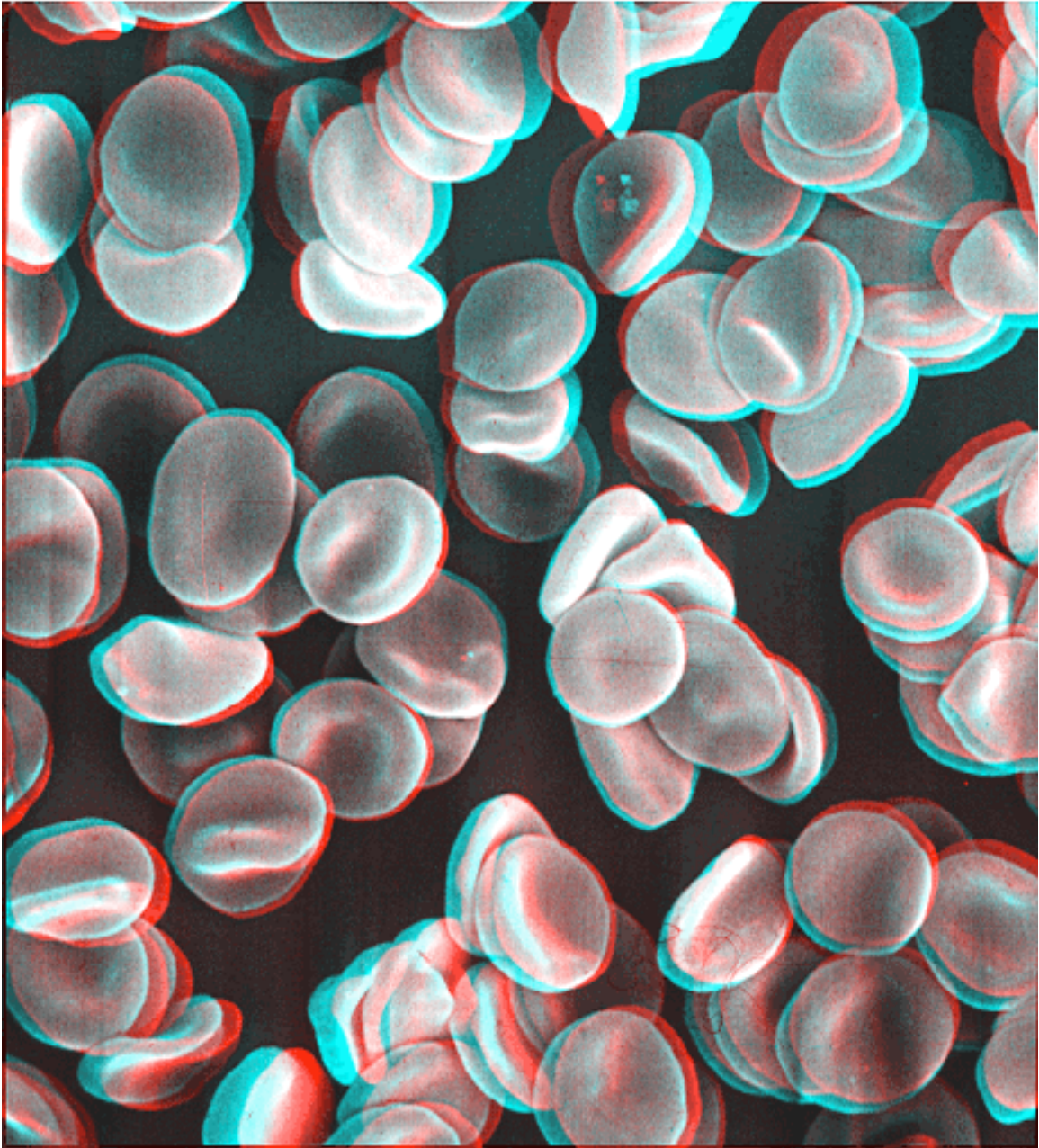


Cells

Cells – the smallest unit that can perform all the processes needed for life



Red Blood Cells

Cell Theory

1. Robert Hooke builds a microscope to look at tiny things. Cork – tiny boxes- cells “tiny rooms”
2. Anton van Leeuwenhoek discovers protists, bacteria and that different animals have different cells types
3. Theodor Schwann(first two) and Rudolph Virchow (third part) develop the cell theory
 - A. All organisms are made of one or more cells
 - B. The cell is the basic unit for all living things
 - C. All cells come from existing cells

Cell Size

Most cells cannot be seen without a microscope

It takes 50 human cells to cover this i

Some cells are large. The yolk of a chicken egg is one big cell.



Cell's Surface Area to Volume Ratio

Cells are usually small because :

They take in food and pass waste through their surface. The volume of a cell grows faster than its surface area. If the volume of a cell gets too big, the cell will not be able to get enough food or pass enough waste because its surface will not be big enough to support it. So the area of a cell's surface will limit its size.

$$\text{Surface Area To Volume Ratio} = \frac{\text{Surface Area}}{\text{Volume}}$$

Parts of A Cell

Cell Membrane- “ The bouncer”

covers the cells surface and acts as
a barrier- controls what goes in and
out of the cell

Cytoplasm – the cell’s fluid

Organelles- “ The Professionals”

Structures in the cell that perform
specific jobs

DNA-“ the plans”

Genetic material that carries info on making
new cells and organisms.

Most are inside the cell’s nucleus- the center
of a cell

Two Types of Cells

1. Prokaryotic – no nucleus or organelles

Two Examples

A. Eubacteria-

world's smallest cells

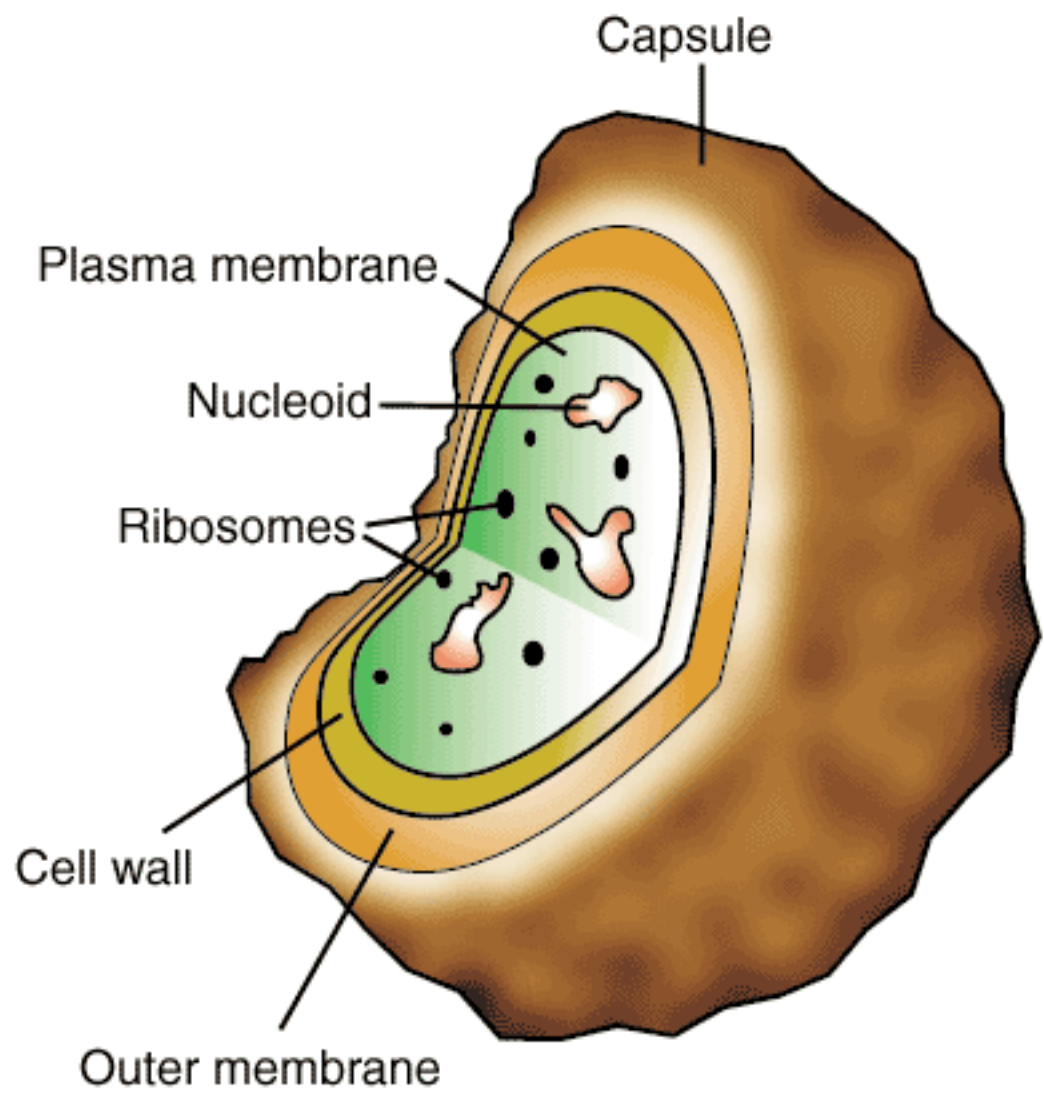
have **Ribosomes**- protein filled organelles

have **DNA**

have a **cell wall**- gives the cell its shape

have a **membrane**

live in soil, water and organisms



2. Archaeobacteria

Single celled

Ribosomes

Membrane

DNA

No Nucleus

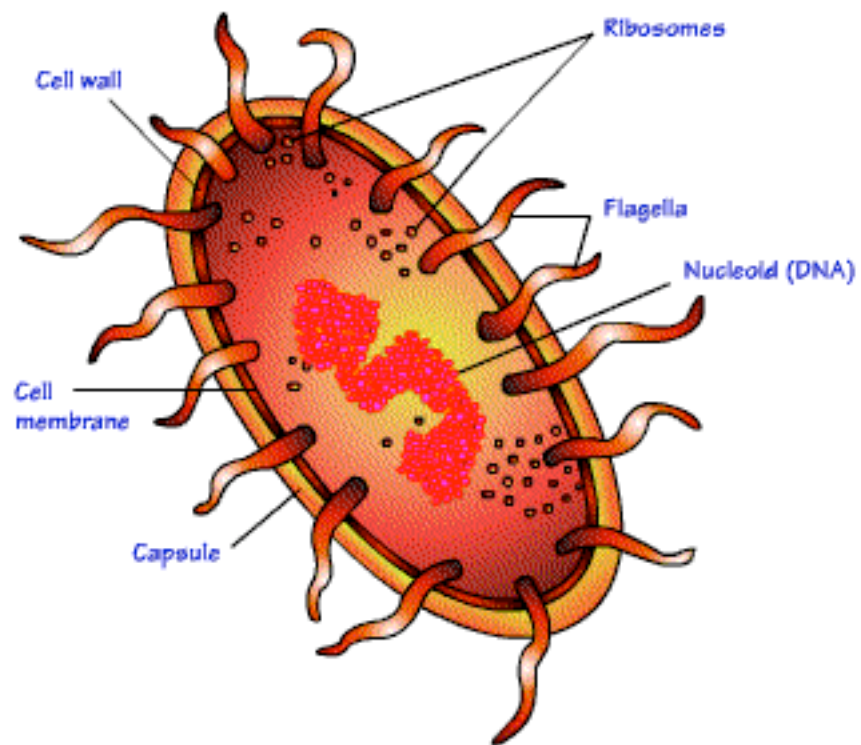
Three Types

Salt Loving and Heat Loving-

live in extreme environment

Methane making – creates gas found in

Swamps



2.Eukaryotic Cells

Largest Cells – still small but 10 times bigger than Prokaryotic cells

HAVE A NUCLEUS

DNA

Organelles

Make up All living things other than the two bacteria

Most are Multi cellular- made up of many cells

